

CLAIMS

[001] A method for controlling a three-phase direct-current motor (11) wherein three first switching states (a, c, e) are cyclically repeated, wherein in each of the first three switching states one of the three phases (U, V, W) of the direct-current motor (M) is periodically switched over between a first and a second input voltage (+, -) whereas the two other phases are continuously connected to the first input voltage (+).

[002] The method according to claim 1, characterized in that respectively one second switching state (b, d, f) is inserted between two first switching states (a, c, e), wherein one of the three phases (U, V, W) is periodically switched over between the first and the second input voltage (+, -) whereas the two other phases are continuously connected to the second input voltage (-).

[003] The method according to claim 2, characterized in that in every second switching state (b, d, f) that phase is switched over which is periodically switched over neither in the preceding nor in the following first switching state (a, c, e).

[004] The method according to claim 2 or claim 3, characterized in that the fraction ( $\alpha$ ) of the time in which the periodically switched-over phase is connected to the second input voltage (-) from the duration of each first switching state (a, c, e) is equal to the fraction of the time in which the periodically switched-over phase is connected to

the first input voltage (+) from the duration of each second switching state (b, d, f).

[005] The method according to any one of claims 2 to 4, characterized in that in each second switching state (b, d, f) the fraction ( $\alpha$ ) of the time in which the periodically switched-over phase is connected to the first input voltage (+) is regulated proportionally to the load of the direct-current motor (11).

[006] The method according to any one of the preceding claims, characterized in that in each first switching state (a, c, e) the fraction of the time in which the periodically switched-over phase is connected to the second input voltage (-) is regulated proportionally to the load of the direct-current motor (11).

[007] The method according to any one of the preceding claims, characterized in that an AC/DC inverter is used for controlling the direct-current motor (11), between each phase (U, V, W) of the motor (11) and a terminal carrying the first input voltage (+), respectively one first switch (SU1, SV1, SW1) of the AC/DC inverter is provided and between each phase (U, V, W) of the motor (11) and a terminal carrying the second input voltage (-), respectively one second switch (SU2, SV2, SW2) of the AC/DC inverter is provided and that in every first switching state (a, c, e), the first switch of the periodically switched-over phase remains open whilst the second switch of this phase is periodically switched over.

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2 [008] The method according to claim 7, characterised in  
3 that in every second switching state (b, d, f) the  
4 second switch of the periodically switched-over  
5 phase remains open whilst the first switch of this  
6 phase is periodically switched over.  
7  
8 [009] An AC/DC inverter, characterised by a control  
9 circuit (C) for carrying out the method according  
10 to any one of the preceding claims.  
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